Powerpoint Presentation from Today 's Meeting (proposed Goliad County Aquifer Exemption)

Stacey Dwyer to: Harry Anthony, Andy Barrett, charles.maguire, Art Dohmann, afriedman, jbb, raulieirwin, larrydunbar 08/16/2012 04:31 PM

Cc: William Honker, Wren Stenger, Philip Dellinger, Chrissy Mann, David Gillespie

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Technical Meeting Goliad Exemption 8-16-12.pptx

Good Afternoon,

I thank all of you for traveling to attend today's meeting. It was a good discussion. Here is Ray's power point presentation.

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Technical Meeting
Goliad Exemption
8-16-12

Issues with the latest submissions

- **TCEQ has requested exemption of A, B, C and D sands**
- **Exemption area has been informally reduced**
- **Additional submissions for the reduced exemption include:**
  - **Files electronically submitted 7/12-13/12**
  - **CDs provided through the mail**
    - **Application for mining permit**
    - **Application for PAA -1**
    - **GW modeling approaches**

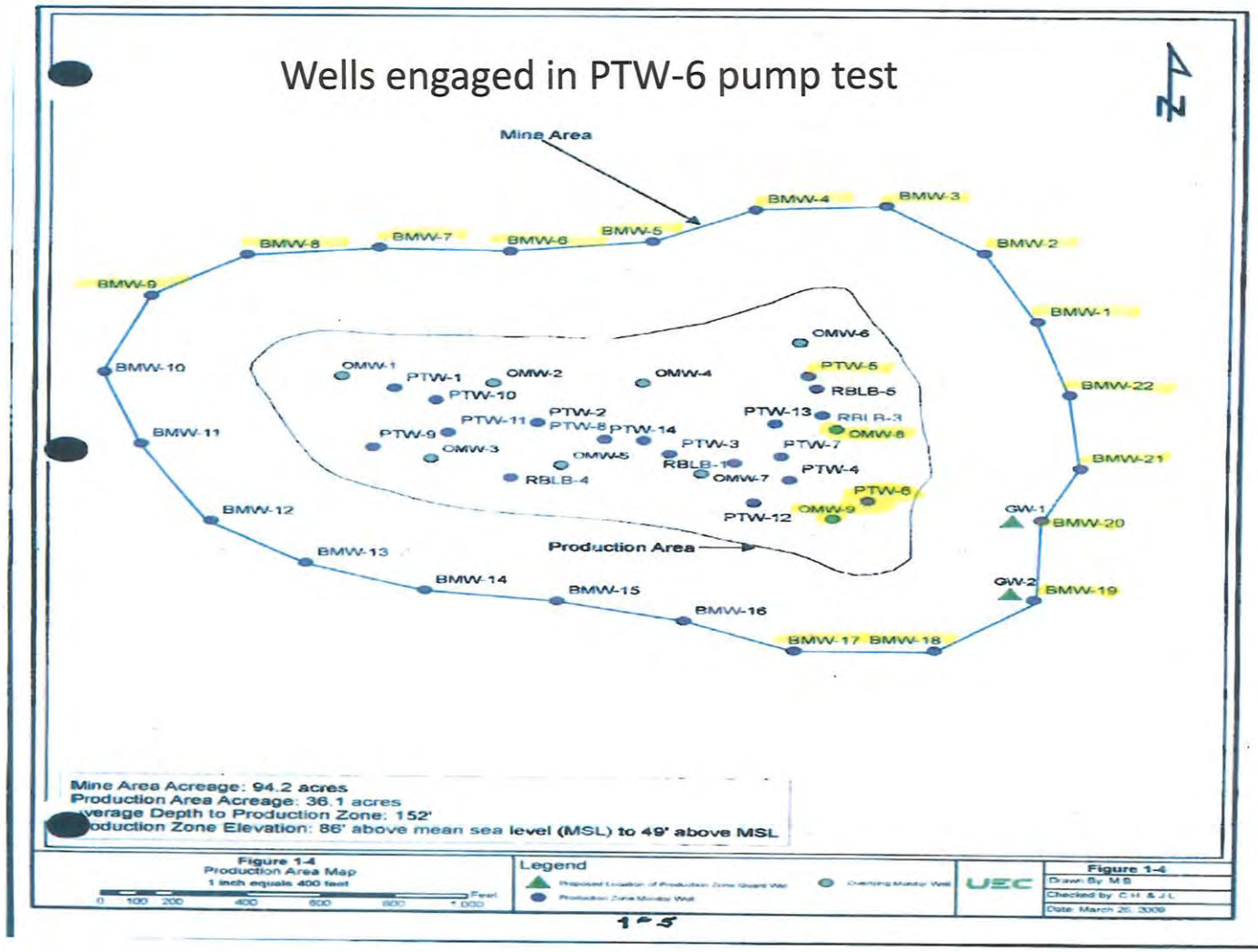
Exemption requires compliance with the current use criterion – aquifer does not currently serve as an USDW

Submissions provide:

- **Pump test data**
- **Cross sections**
- **Clay layer thickness**
- **Fluid level measurements**
- **GW modeling approaches**

Pump tests

- Two pump tests were conducted
  - PTW 1 provides no proof of hydraulic isolation with no overlying monitor wells
  - PTW 6 shows only localized isolation with two overlying monitor wells



Results of PTW-6 pump test

- Shows good communication with monitor well ring
- Indicates hydraulic isolation with OMW-9 completed in A sand
- Results of second OMW-8 is not clear

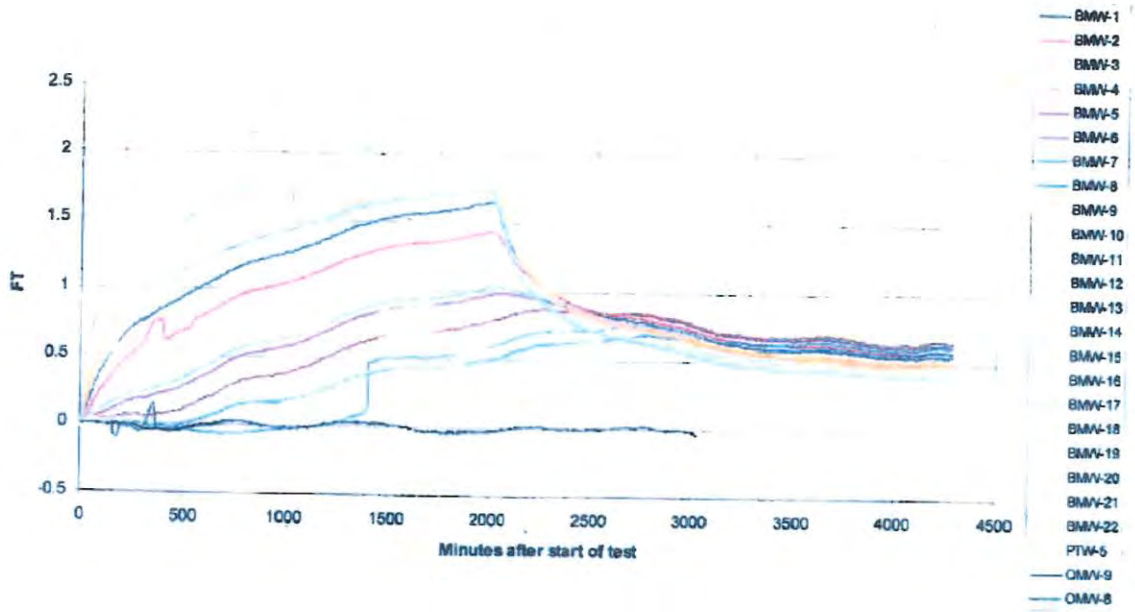


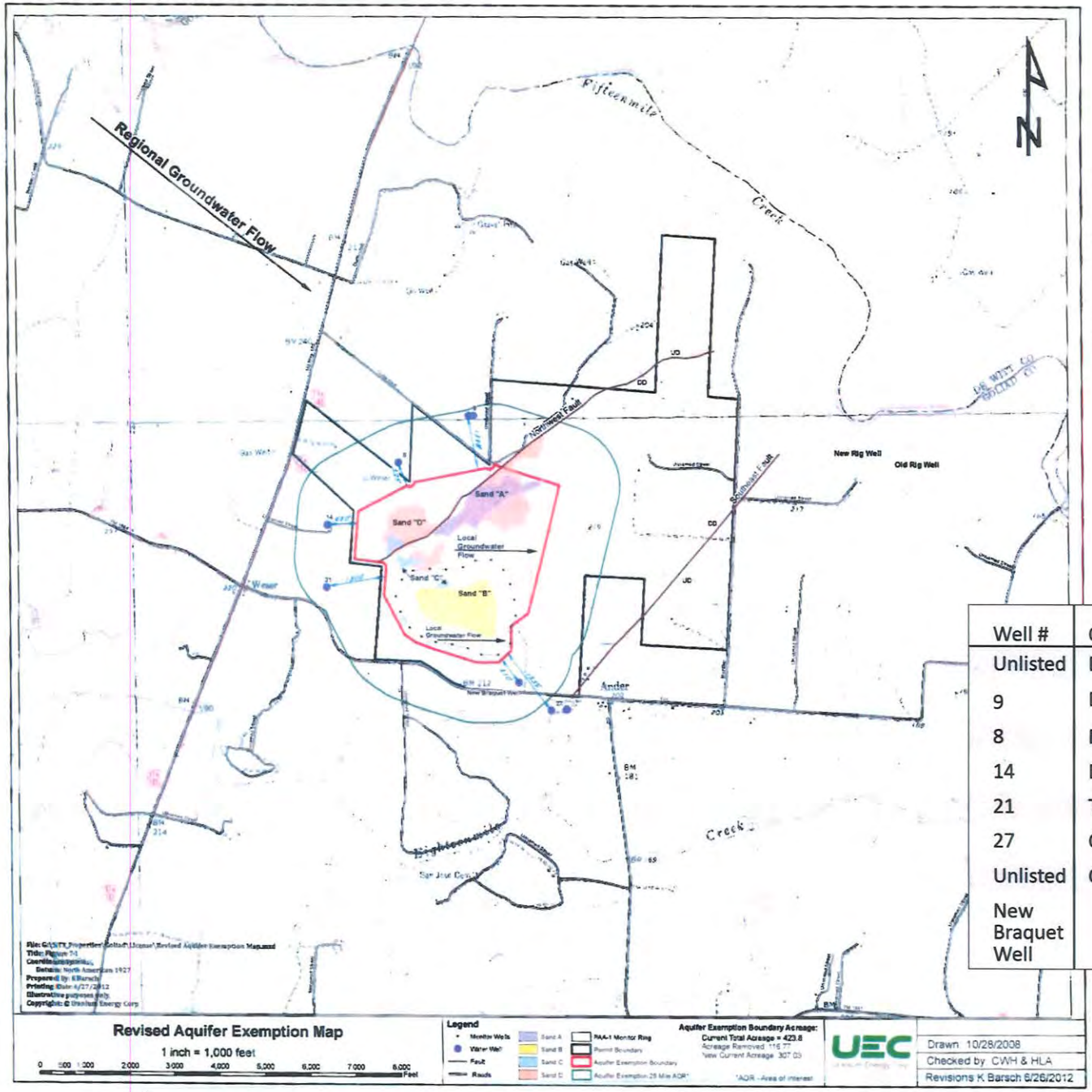
Figure 4.7. Water level drawdown and recovery in Troll observation wells for the PTW-6 test.

Can pump tests be relied upon to find hydraulic isolation between A and B sands exists?

- Distance between pump test well PTW-6 and OMW-9 showing good isolation is approximately 125'
- There is a much greater distance between the test and down gradient wells of concern
  - Distance to the Braquet well is approx. 1400'
  - Distance to the Church wells is approx. 2300'
- Pump test using PTW -6 is simply too far away to extrapolate results to wells of concern

Cross-sections indicate laterally extensive confining layers *however*

- Cross-sections also indicate two faults forming a graben within the facility boundaries
  - NW fault
  - SE fault
- Numerous cross-sections dissecting the faults indicate vertical displacement sufficient to provide concern that the faults could be vertically transmissive and different sand layers could be in communication with each other at the faults
- The SE fault runs very close to the Church wells
- Numerous artificial penetrations may remain open in the direction of the wells of concern

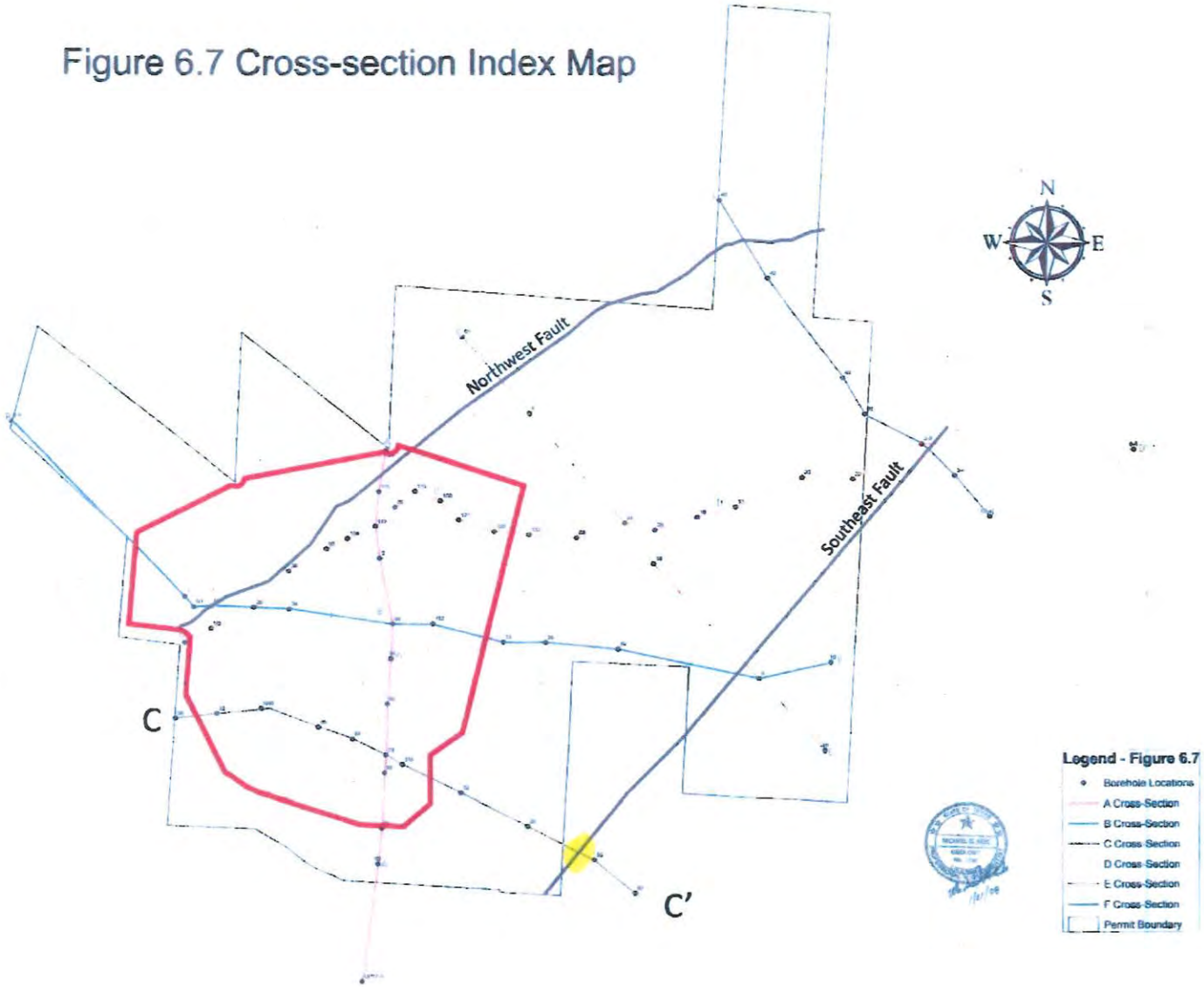


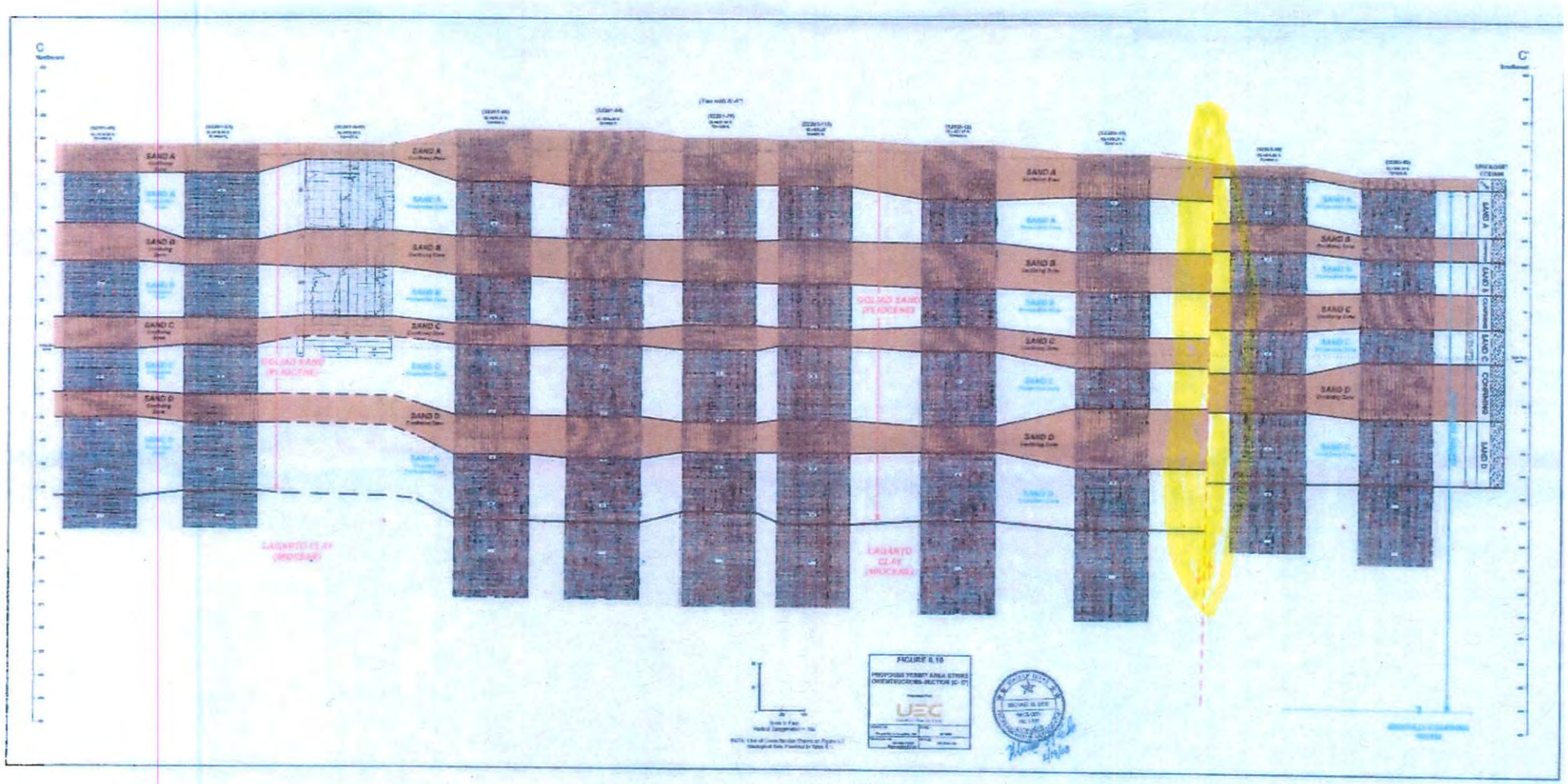
Wells of Concern in Modified AOR

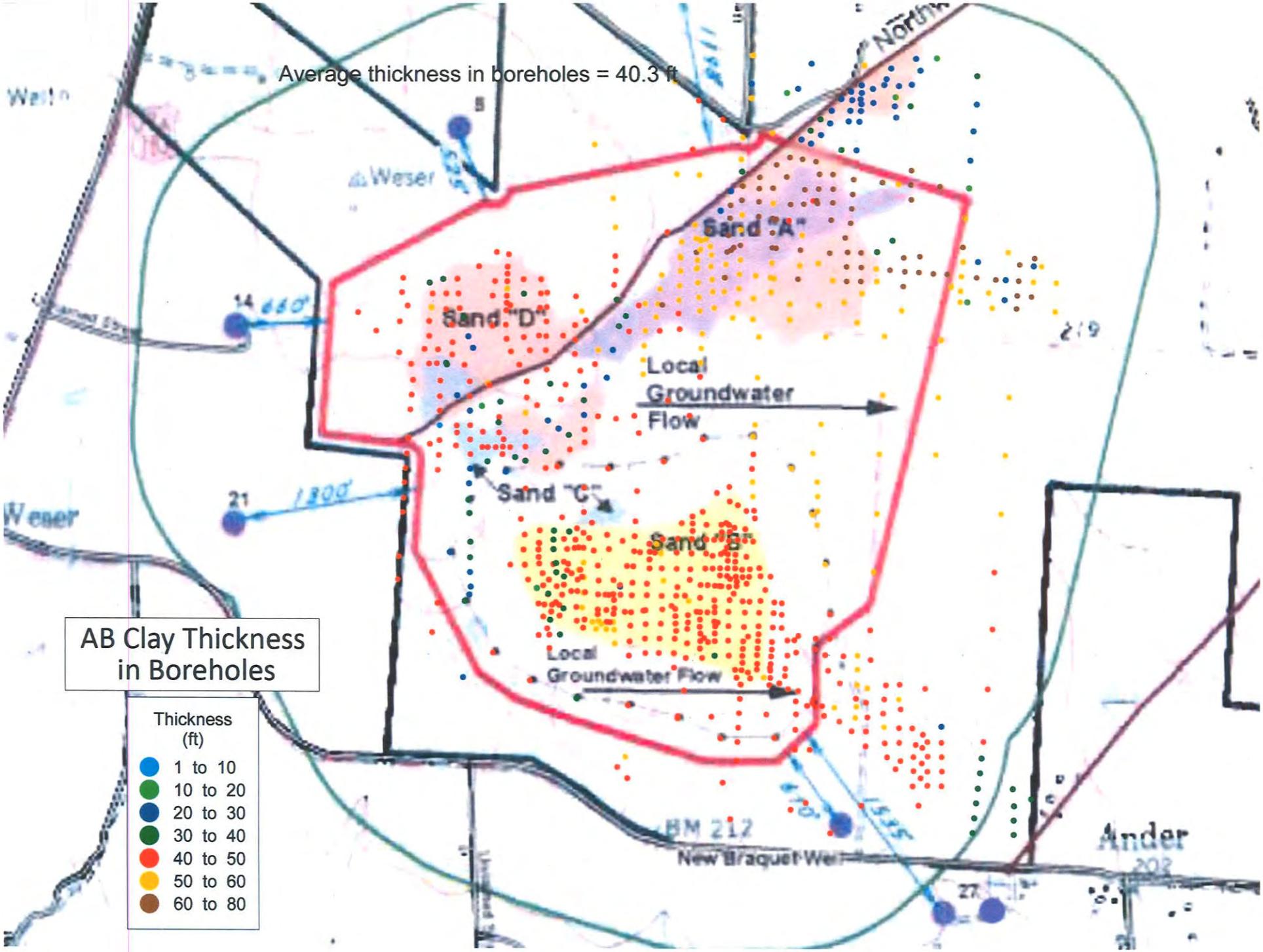
8/16/12

Well #	Owner	Depth	Source
Unlisted	Duderstadt2	130′	GCGWCD
9	Duderstadt1	50′	GCGWCD
8	M. Walker 1	unknown	Application
14	D. Cheek 2	unknown	Application
21	T. Long	80′	Application
27	Church 1	96′	Water well report
Unlisted	Church 2	80′	Church member
New Braquet Well		95′	Water well report

Figure 6.7 Cross-section Index Map




C
C'
SAND A
SAND B
SAND C
SAND D
SOLIMAO SAND (PLIOCENE)
LAGUNTO CLAY (MIOCENE)
FIGURE 6.19
UEC


Average thickness in boreholes = 40.3 ft
Sand "A"
Sand "D"
Sand "C"
Sand "B"
Local Groundwater Flow
Local Groundwater Flow
AB Clay Thickness in Boreholes
Thickness (ft)
1 to 10
10 to 20
20 to 30
30 to 40
40 to 50
50 to 60
60 to 80
Weser
Weser
BM 212
Ander